Claims

1.   A Virtual Device composed of a multitude of stationary
and/or portable electronic devices, of which at least one
of the devices is a first Open Device with an available
5   inner structure and a network interface, at least one
Primitive Device arranged to communicate with other Devices
and act as a pure slave to said devices,
c h a r a c t e r i z e d   i n   at least one Closed Device
with a closed inner structure and a network interface, ,
10   said open and closed devices being connected in a Personal
Area Network, a Personal Area Network middleware being
installed in said first Open Device, said first Open Device
being arranged to act as a Personal Area Network
controller.

15   2.   A Virtual Device as claimed in claim 1,
c h a r a c h t e r i z e d   i n   a second Open Device
connected to said Personal Area Network.

3.   A Virtual Device composed of a multitude of stationary
and/or portable electronic devices,including an Open
20   Devices with an available inner structure and a network
interface, at least one Primitive Device arranged to
communicate with other devices and act as a pure slave to
said devices,
c h a r a c t e r i z e d   i n   at least one additional
25   Open Device, at least one Closed Device with a closed inner
structure and a network interface, said open and closed
devices being connected in a Personal Area Network, a
Personal Area Network middleware being installed on said
Open Devices, said Personal Area Network Middleware being
30   distributed between said Open Devices, said Open Devices
being arranged to act as a Personal Area Network
controller.

4.   A Virtual Device as claimed in claim 3,
c h a r a c t e r i z e d   i n   that a Web services
35   platform is installed on each Open Device, each Open Device

being arranged to invoke Web services running on other Open
Devices.

5.   A Virtual Device as claimed in claim 1, 2, 3 or 4,
c h a r a c t e r i z e d   i n   that at least one of said
5   Open or Closed Devices is equipped with a network interface
connected to an external network.

6.   A Virtual Device as claimed in claim 5,
c h a r a c t e r i z e d   i n   a server in said external
network arranged to store a backup copy of information
10   stored in said Personal Area Network, and synchronize said
backup copy with said information.

7. A Virtual Device as claimed in claim 1, 2, 3 or 4,
c h a r a c t e r i z e d   i n   that said open device or
devices is/are arranged to discover and register any
15   devices present in said Personal Area Network.

8. A Virtual Device as claimed in claim 7,
c h a r a c t e r i z e d   i n   that said open device or
devices is/are arranged to periodically poll the network.

9. A Virtual Device as claimed in claim 1, 2, 3 or 4,
20   c h a r a c t e r i z e d   i n   that said open device or
devices is/are arranged to redirect an output stream from
one device to an input port on another device.

10. A Virtual Device as claimed in claim 1, 2, 3 or 4,
c h a r a c t e r i z e d   i n   that said open device or
25   devices is/are arranged to redirect an application to a
specific device present in said Personal Area Network.

11.   A Virtual Device as claimed in any of the claims 1, 2,
3 or 4,
c h a r a c t e r i z e d   i n   that said Open Device or
30   Open Devices is/are arranged to store and maintain a device
profile, said device profile including information on at
least identity, type, capabilities and services offered by

any Open, Closed or Primitive Devices available for said
Private Area Network.

12. A Virtual Device as claimed in any of the claims 7-10,
c h a r a c t e r i z e d   i n   that said Open Device or
5   Open Devices is/are arranged to store and maintain a user
profile, said user profile including information on at
least which Open, Closed or Primitive Devices that are
members of said Private Area Network, which Open, Closed or
Primitive Devices that are available for said Private Area
10   Network, redirection information, which Open, Closed or
Primitive Devices that should be visible on an external
network, the distribution of services among Open or Closed
Devices present, and the distribution of resources among
Open or Closed Devices present.

15   13. A Virtual Device composed of a multitude of portable
electronic devices, including an Open Device with an
available inner structure and a network interface, at least
one Primitive Device arranged to communicate with other
devices and act as a pure slave to said devices,
20   c h a r a c t e r i z e d   i n   at least one Closed Device
with a closed inner structure and a network interface, said
at least one Closed Device being equipped with a network
interface connected to an external network which includes a
Personal Area Network server, a Personal Area Network
25   middleware being installed on said server, said open and
closed devices and said server forming a Personal Area
Network operated by said Personal Area Network middleware.

14. A Virtual Device composed of a multitude of portable
electronic devices,
30   c h a r a c t e r i z e d   i n   a Closed Device with a
closed inner structure and a network interface connected to
an external network, at least one Primitive Device arranged
to communicate with said Closed Device or devices and act
as a pure slave to said device or devices, a server in said
35   external network on which is installed a Personal Area
Network middleware, said server being arranged to

communicate with said closed device or devices in order to
act as a Personal Area Network controller.

15.   A Virtual Device as claimed in claim 14,
c h a r a c t e r i z e d   i n   that said server is
5   arranged to store a backup copy of information stored in
said Personal Area Network, and synchronize said backup
copy with said information.

16. A Virtual Device as claimed in claim 13, 14 or 15,
c h a r a c t e r i z e d   i n   that said server is
10   arranged to discover and register any devices present in
said Personal Area Network.

17. A Virtual Device as claimed in claim 16,
c h a r a c t e r i z e d   i n   that said server is
arranged to periodically poll the network.

15   18. A Virtual Device as claimed in claim 13, 14 or 15,
c h a r a c t e r i z e d   i n   that said server is
arranged to redirect an output stream from one device to an
input port on another device.

19. A Virtual Device as claimed in claim 13, 14 or 15,
20   c h a r a c t e r i z e d   i n   that said open device or
devices is/are arranged to redirect an application to a
specific device present in said Personal Area Network.

20.   A Virtual Device as claimed in any of the claims 14-
15,
25   c h a r a c t e r i z e d   i n   that said server is
arranged to store and maintain a device profile, said
device profile including information on at least identity,
type, capabilities and services offered by any Open, Closed
or Primitive Devices available for said Private Area
30   Network.

21.   A Virtual Device as claimed in claim 16, 17, 18 or 19,
c h a r a c t e r i z e d   i n   that said server is
arranged to store and maintain a user profile, said user

profile including information on at least which Open,
Closed or Primitive Devices that are members of said
Private Area Network, which Open, Closed or Primitive
Devices that are available for said Private Area Network,
5   redirection information, which Open, Closed or Primitive
Devices that should be visible on an external network, the
distribution of services among Open or Closed Devices
present, and the distribution of resources among Open or
Closed Devices present.

10   22. A Virtual Device as claimed in claim 12 or 21,
c h a r a c t e r i z e d   i n an interface to said
Personal Area Network middleware allowing a user to control
the Personal Area Network middleware.

23. A Virtual Device as claimed in claim 12 or 21,
15   c h a r a c t e r i z e d   i n an Application Programming
Interface to said Personal Area Network middleware allowing
an application access to capabilities and functions of said
Personal Area Network middleware.

24. A Virtual Device as claimed in claim 23,
20   c h a r a c t e r i z e d   i n   that said Application
Programming Interface is implemented in Java or CORBA, or
as an XML Web service.